verizon

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July 2, 2018

Ex Parte

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies, ET Docket No. 13-84; Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields, ET Docket No. 03-137

Dear Ms. Dortch:

On June 28, Gina Cacciatore, DJ Kilian, Tamara Preiss, and Andy Lachance of Verizon met with Julius Knapp, Bruce Romano, Aspasia Paroutsas, Ed Mantiply, and Martin Doczkat of the Office of Engineering and Technology (OET) to discuss the pending Further Notice of Proposed Rulemaking in the above-captioned proceeding.[1]

We discussed the need for the Commission to adopt safe harbors with respect to carrier efforts to restrict access to and notify the public about the presence of radiofrequency emissions (RFE) on rooftops and at other accessible wireless transmitter locations.[2] A flexible approach to rooftop mitigation efforts similar to the approach taken in Verizon's consent decree[3] would be effective, while still taking into account that rooftop situations may vary and landlords sometimes resist carrier efforts to restrict access. As part of our recommended approach, we shared educational information that we provide to building owners and managers and pole owners about emissions at those locations. Copies of two such letters are attached. We also explained that our compliance program applicable to all of our transmitters ensures that there are no emissions over the FCC limits at ground level or where people live or work.

Sincerely,

Andre J. Lachance

Attachments

cc: (via email)
Julius Knapp
Bruce Romano
Aspasia Paroutsas
Ed Mantiply
Martin Doczkat

[1] *Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies*, ET Docket No. 13-84; *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, ET Docket No. 03-137, Further Notice of Proposed Rulemaking, 28 FCC Rcd 3498 (2013).

[2] *Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies*, ET Docket No. 13-84; *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, ET Docket No. 03-137, Comments of Verizon and Verizon Wireless (filed September 3, 2013), at 10-15.

[3] *See Cellco Partnership d/b/a Verizon Wireless*, Order, 29 FCC Rcd 4789 (2014).

3/17/2016

To: [redacted]

Transmitted via email to [redacted]

RE: Verizon Wireless [redacted] Site located at: [redacted]

Dear [redacted],

We write to inform you that Verizon Wireless has performed a routine compliance evaluation on the above-noted site.

Based on the results of the evaluation, Verizon Wireless is required and has implemented all the following:

- Site Access Locations: ○ Install NOC sign at rooftop access door
- Alpha Sector Location: ○ Install physical barrier (82x19)' ○ Install Caution and Guidelines signs on both sides of the sector
  - ○ Remove Guidelines and Notice signs from the sector
- Beta Sector Location: ○ Install physical barrier (18x25)'
  - ○ Install Caution and Guidelines signs on both sides of the sector
    Remove Guidelines and Notice signs from the sector
- Gamma Sector Location:
  - ○ Install physical barrier (20x13)' ○ Install Caution and Guidelines signs on both sides of the sector
  - ○ Remove Guidelines and Notice signs from the sector
- Delta Sector Location: ○ Install physical barrier (10x20)'
  - ○ Install Caution and Guidelines signs on both sides of the sector
    Remove Guidelines and Notice signs from the sector

Details of the mitigation requirements are included on the "**Compliance Mitigation Diagram**".

To ensure general public safety, it is important that you contact Verizon Wireless personnel **at least 24 hours in advance** should general maintenance need to be performed in areas of potential concern as marked on the next page of this document (see "**Verizon Wireless Radiofrequency Emissions Map**"). This is required to comply with FCC guidelines and ensure the environment is safe for general maintenance workers who may require RF Safety & Awareness training. With notification, Verizon Wireless is able to evaluate appropriate actions needed relating to the antennas and proximity of the work location.

Please refer to FCC Office of Engineering and Technology Bulletin 65 and the attached RF Brochure if you would like further information on RF exposure guidelines, RF safety, and property owner responsibilities. Policy related questions should be directed to VZWRFCompliance@verizonwireless.com. If you have any additional questions or concerns, please contact your local Verizon Wireless resource below:

Contact Name	Contact Email	Contact Phone
[redacted]	[redacted]	[redacted]

In the event that emergency maintenance must be performed on the facility and the above-noted contact is not available, please call the Verizon Wireless Network Operations Center at **800-264-6620** for assistance.

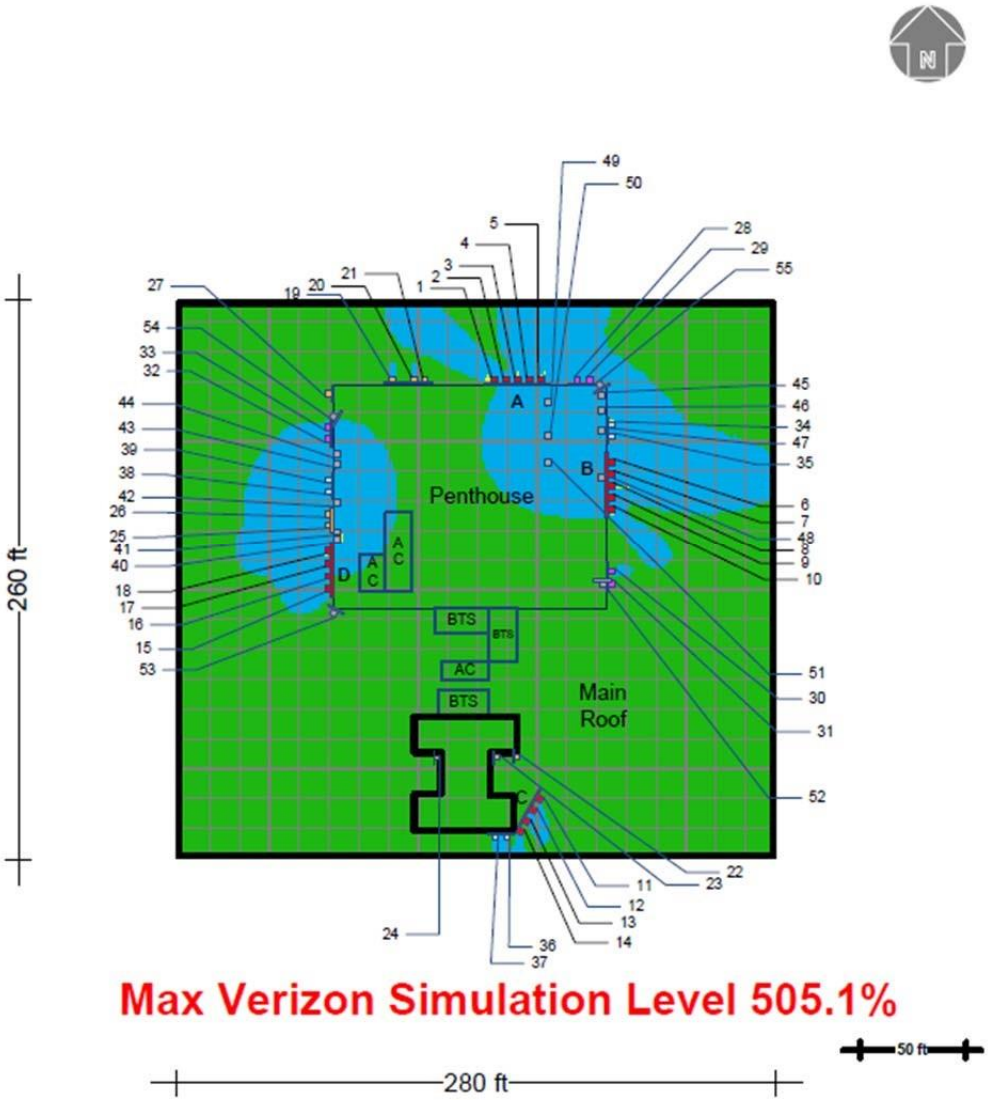
Sincerely,

[redacted]

Manager-RF System Design, Verizon Wireless

Verizon Wireless (VZW) Radiofrequency (RF) Emissions Map

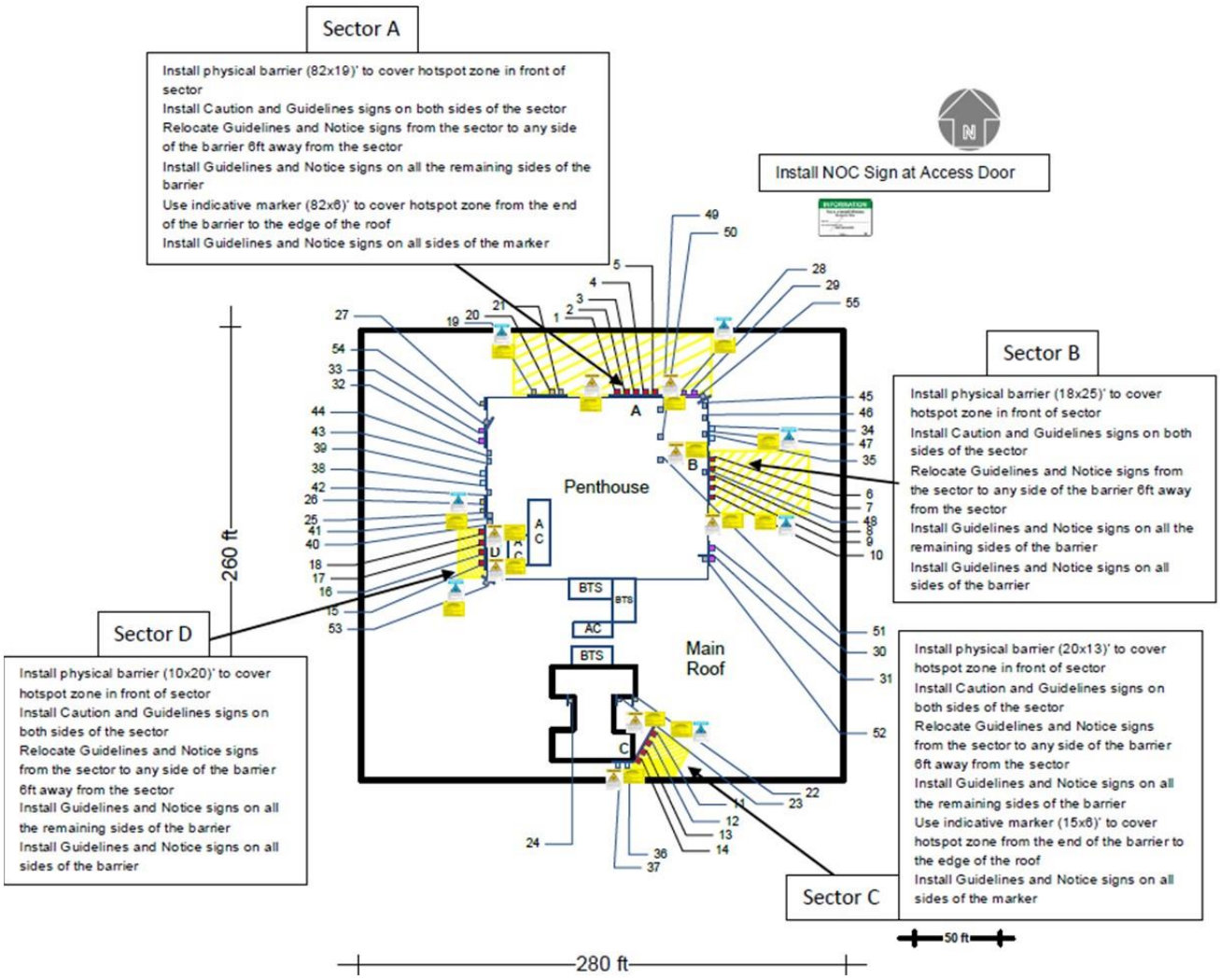
The following site layout represents a current snapshot in time of the predicted Verizon Wireless RF emissions from transmitting antennas on this facility. Contact Verizon Wireless should maintenance need to be performed in any non-green areas.



Color	% Occupational MPE	Instructions
	0 to 20	Safe In Relation to VZW. Contact Other Carriers Before Entering This Area
	20 to 100	Contact VZW Before Accessing This Area
	Greater Than 100	

	Greater Than 1000

Verizon Wireless Compliance Mitigation Diagram



Property Owner Responsibilities

(M.E.N.U)

RF exposure safety and the protection of every licensee's infrastructure are very important. Property owners and licensees have a shared responsibility in maintaining a safe and secure RF environment. Property owners can help in this significant endeavor by:

⇒ **M**aintaining all necessary wireless licensee contact information.

⇒ **E**nforcing restricted access (help maintain a Controlled **E**nvironment). **E**nsuring all building/maintenance personnel are aware that the potential for exposure exists, and follow all appropriate entry and safety procedures.

⇒ **N**otifying all licensees when any non-carrier requests access to any area with antennas **at least 24 hours in advance.**

⇒ **U**nderstanding that compliance with the FCC and OSHA can be achieved with RF Exposure levels above the applicable limit if the proper signage, physical barrier, and access restrictions are implemented. Commitment to compliance and willingness to cooperate are essential.

For General RF Safety & Awareness Questions

Verizon Wireless

E-mail: **VZWRFCompliance@vzw.com**

E-mail Subject: "ATTN: RF Compliance"

In The Event That Emergency Maintenance Is Required

24-Hour Network Operations Center:

1-800-264-6620

RF Safety & Awareness Training Contacts

Amirit Technologies
(www.amirit.com)

C-Squared Systems
(www.csquaredsystems.com)

Dtech Communications
(www.dtechcom.com)

EBI Consulting
(www.ebiconsulting.com)

Global RF Solutions
(www.grfs.net)

Hammett & Edison, Inc.
(www.h-e.com)

Lawrence Behr Associates, Inc.
(www.lbagroup.com)

LCC
(www.lcc.com)

Millennium Engineering
(www.millenniumengineering.net)

Pinnacle Telecom Group
(www.pinnacletelecomgroup.com)

Richard A. Tell Associates
(www.radhaz.com)

RSI
(www.rfcomply.com)

SiteSafe
(www.sitesafe.com)

Telnet
(www.telnet-inc.com)

Trott Communications Group
(www.trottgroup.com)

Waterford Consultants
(www.waterfordconsultants.com)

Radio Frequency (RF) Emissions

SAFETY & AWARENESS

Federal Compliance Requirements

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards incorporate prudent margins of safety. The following represents an overview of the most applicable information:

Classifications for Exposure Limits

Occupational	General Population
Persons are "exposed as a consequence of their *employment*" and are "*fully aware* of the potential for exposure and can *exercise control* over their exposure".	Any persons that "*may not be made fully aware* of the potential for exposure or *cannot exercise control* over their exposure". Those in this category do not have RF Safety & Awareness Training.

Ensuring Compliance With FCC Guidelines

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines.

Wireless Licensees are required by law to implement the following:

- **Restrict access** to areas with transmitting antennas.
- **Post notification signage on every access point** to increase awareness of the potential for exposure BEFORE one enters an area with antennas.
- **Place additional notification signage and visual indicators** in an area with antennas (beyond an access point) where RF exposure levels may start to exceed the FCC's limits.

Compliance Materials

Notification Signage

(Notice) RF Guidelines - Informs viewer of the basic safety guidelines for working in an RF Environment.

Information– Provides relevant contact information for any questions or requests.

(Blue) Notice - Informs viewer that beyond the sign, RF exposure levels may exceed the General Population MPE limit but will remain below the Occupational MPE limit.

(Yellow) Caution - Informs viewer that beyond the sign, RF exposure levels may exceed the General Population and Occupational MPE limit.

(Red) Warning - Informs viewer that beyond the sign, RF exposure levels may substantially exceed the General Population and Occupational MPE limit.

Physical Barriers

In addition to locked doors or ladders, wireless licensees may also be required to place physical barriers as a means of visually demarcating an area where RF levels are expected to exceed the FCC's limits.

Examples of Physical Barrier Materials: plastic chains, buckets, stanchions, plastic cones, fiberglass fences, and poles mounted in cinderblocks.

Antenna Safety

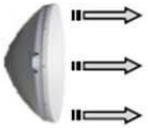
Antenna Types

Yagi - Antenna that radiates energy in one direction. RF energy has a narrow beam. **Walk behind or under this antenna.**

Panel - Antenna that radiates energy in one direction. RF energy beam can range from narrow to very wide. **Walk behind this antenna. Stay out of the general direction that the antenna is pointing.**

Whip - Antenna that radiates energy equally in all directions. **Maintain as much distance as possible from this antenna.**

Microwave - Antenna that radiates energy in one direction. RF energy has a narrow beam. **Walk under or behind this antenna.**



When In An Environment With Antennas:

⇒ Maintain at least a 3-foot clearance from all antennas. A 10-foot separation distance is preferred.

⇒ Never touch an antenna. Assume all are active.

⇒ Read and obey ALL signs on an access point.

⇒ Read and obey ALL signs in the environment with antennas.

⇒ Never walk past an physical barrier without first confirming transmitter inactivity.

⇒ Never walk in front of or stand in front of an antenna whenever possible. Keep walking.

⇒ Contact all wireless licensees **at least 24 hours in advance** of scheduled maintenance.

verizon

June 14, 2018

To: [redacted]

Transmitted via email to [redacted]

RE: Verizon Wireless [redacted].

Site Located at: [redacted].

Dear Sir or Madam,

We write to inform you that Verizon Wireless has performed a radio frequency (RF) compliance evaluation for the above-noted site and based on the result of the evaluation, this site is compliant with FCC Guidelines.

The FCC has established safety guidelines relating to potential RF exposure from cell sites. The FCC developed the standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The FCC provides information about the safety of radio frequency (RF) emissions from cell towers on its website at: https://www.fcc.gov/engineeringtechnology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety

The following mitigation requirement will be implemented on the above-mentioned site:

- Install a yellow "CAUTION" sign.
- The sign will indicate the minimum approach distances are 10ft in front of the antenna and 5ft above or below the antenna.

To ensure general public safety, it is important that you contact Verizon Wireless personnel **preferably at least 24 hours in advance** should general maintenance need to be performed in areas of potential concern as marked on the next page of this document. This is required to comply with FCC guidelines and ensure the environment is safe for general maintenance workers. With notification, Verizon Wireless is able to evaluate appropriate actions needed relating to the antennas and proximity of the work location.
Please refer to the FCC Office of Engineering and Technology Bulletin 65, Bulletin 56, and the attached Verizon Wireless RF Brochure for information on RF exposure guidelines, RF safety, and landlord responsibilities. Contact your local Verizon Wireless resource below if you have additional questions, or if maintenance is to be performed on the facility.

Contact Name	Contact Email	Contact Phone
[redacted]	[redacted]	[redacted]

In the event that emergency maintenance must be performed on the facility and the above-noted contact is not available, please call the Verizon Wireless Network Operations Center at **800-264-6620** for assistance.

Sincerely,

[redacted]

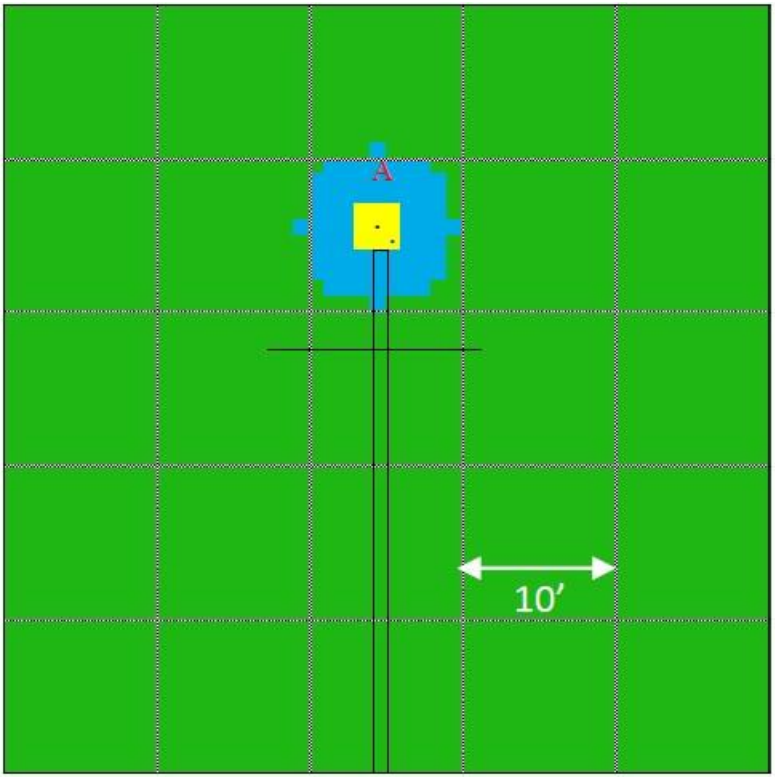
Manager-RF System Design

Verizon Wireless

Verizon Wireless (VZW) Radiofrequency (RF) Emissions Map

The following site layouts represent a current snapshot in time of the predicted Verizon Wireless RF emissions from transmitting antennas on this facility. Contact Verizon Wireless should maintenance need to be performed in any non-green areas.

Reference Plane: Antenna Face (Down Pole View)



Color	% Occupational MPE	Instructions
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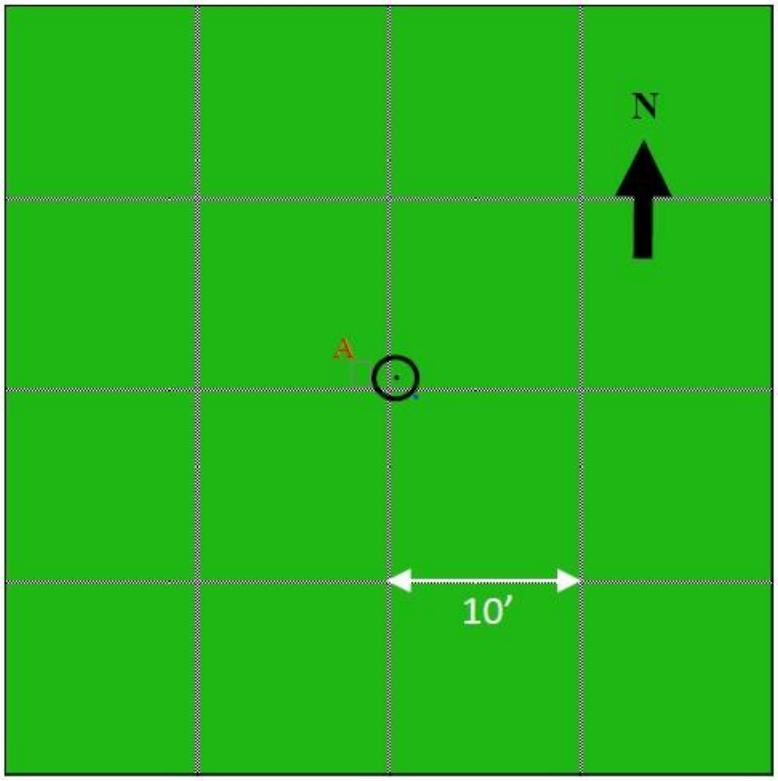
	20 to 100	Contact VZW For Power Shutdown Before Accessing This Area
	Greater Than 100	
	Greater Than 1000	

Reference Plane: Ground Level



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(www.csquaredsystems.com)

Dtech Communications
(www.dtechcom.com)

EBI Consulting
(www.ebiconsulting.com)

Global RF Solutions
(www.grfs.net)

Hammett & Edison, Inc.
(www.h-e.com)

Lawrence Behr Associates, Inc.
(www.lbagroup.com)

LCC
(www.lcc.com)

Millennium Engineering
(www.millenniumengineering.net)

Pinnacle Telecom Group
(www.pinnacletelecomgroup.com)

Richard A. Tell Associates
(www.radhaz.com)

RSI
(www.rfcomply.com)

SiteSafe
(www.sitesafe.com)

Telnet
(www.telnet-inc.com)

Trott Communications Group
(www.trottgroup.com)

Waterford Consultants
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Radio Frequency (RF) Emissions

SAFETY & AWARENESS

FCC Information

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Indicative Barriers

In addition to physical barriers such as locked doors or ladders, wireless licensees may also be required to place indicative barriers as a means of visually demarcating an area where RF levels are expected to exceed the FCC's limits. **Examples of Indicative Barrier Materials:** plastic chains, buckets, reflective paint or tape, plastic cones, fiberglass fences, and poles mounted in cinderblocks.

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⇒ Contact all wireless licensees **at least 24-hours in advance** of scheduled maintenance.